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XIV. *A Rule for finding the* meridional Parts *to any* Spheroid, *with the ſame Exactneſs as in a* Sphere, *by* Colin Mac Laurin, F. R. S. *Communicated by* Andrew Mitchel, *Eſq*; F. R. S.

IT was demonſtrated long ago, that in a Sphere the Nautical Meridian Line is a Scale of logarithmic Tangents of the half Complements of the Latitudes. The ſame may be computed with no leſs Exactneſs to any Spheroid by the following Rule.

Let the Semidiameter of the Equator be to the Diſtance of the *Focus* of the generating Ellipſe from the Centre as m to 1. Let A repreſent the Latitude for which the meridional Parts are required, s the Sine of this Latitude, the *Radius* being Unit; find the Ark B, whoſe Sine is $\frac{s}{m}$; take the logarithmic Tangent of half the Complement of B from the common Tables; ſubtract this logarithmic Tangent from 10.000000, or the logarithmic Tangent of 45°; multiply the Remainder by $\frac{7915.7044678978,}{m}$ *&c.* and the Product ſubtracted from the meridional Parts in the Sphere, computed in the uſual manner for the Latitude A, will give the meridional Parts expreſſed in Minutes for the ſame Latitude in the Spheroid, provided it is oblate. When the Spheroid is oblong, the Difference of the meridional Parts in the Sphere and Spheroid for the ſame Latitude, is then determined

mined by a circular Ark; but it is not neceſſary to deſcribe this Caſe at preſent.

Example: If *m m* : 1 :: 1000 : 22. then the greateſt Difference of the meridional Parts in the Sphere and Spheroid is 76.0929 Minutes: In other Caſes it is found by multiplying the Remainder above-mentioned by 1174.078.

XV. *The* parabolic Orbit *for the* Comet *of* 1739. *obſerved by Signor* Euſtachio Zanotti *at* Bologna.

THE Motion in its own proper Orbit was retrograde.

		o	′
The *Perihelion* was in	♋.	5.	11.
The deſcending Node in	♈.	25.	18.
The *Perihelion* from the Node		69.	53.

	d.	h.	′
The Comet was in the *Perihelion June*	9.	9.	59.
in the deſc. Node *July*	18.	4.	57.

The *Perihelion* of the Comet's Orbit was within the Sphere of the Orbit of *Venus*, and without that of the Orbit of *Mercury*; being diſtant from the Sun 0,69614 Parts of the Earth's mean Diſtance from the Sun.

The Plane of the Orbit ſtood inclined to the Plane of the Ecliptic in an Angle of 53°. 25′.

The Diurnal mean Motion, according as it is interpreted by Dr. *Halley* in his Elements of cometical Aſtronomy, was 1°,5707.